



NEW SOUTH WALES

COAL MINES REGULATION ACT, 1982

-NOTICE OF APPROVAL

APPROVAL No.: MDA Ex ia 2244

FILE No.: C89/0919

DATE : 3rd September 1990

It is hereby notified that the Chief Inspector of Coal Mines, pursuant to the provisions of Clause 6 of the Coal Mines Regulation (Approval of Items) Regulation, 1984, and for the purposes of Clause 27 of the Coal Mines Regulation (Electrical-Underground Mines) Regulation, 1984, approves as being in compliance with the requirements of, and for the purposes of the said Clause 27 of any apparatus or cable listed below:

Description: 3 CHANNEL SWITCH/ PROXIMITY DETECTOR RELAY

Identification: MTL 2213

Category (Clause 27): EXPLOSION PROTECTED

Sub-category: INTRINSICALLY SAFE


This approval is issued to,

Name: MTL INSTRUMENTS PTY LTD

Address: APPLE CROSS, PERTH, WA 6153

It is the responsibility of this approval holder to ensure that the above apparatus is manufactured, tested, and supplied in accordance with the requirements of this approval including the schedule.

This apparatus may be used in any part of a coal mine in New South Wales subject to compliance with the requirements of this approval and the requirements of the Coal Mines Regulation Act, 1982.


A A RECZEK
Senior Inspector of Electrical Engineering
FOR CHIEF INSPECTOR OF COAL MINES



NEW SOUTH WALES

COAL MINES REGULATION ACT, 1982

SCHEDULE

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Apparatus

A 3 channel switch/proximity detector relay and system designated type MTL 2213, designed to enable the independent control of three non-hazardous area loads by three switches or approved proximity detectors in a hazardous area, and to restrict the transfer of energy from a non-intrinsically safe power source to these circuits by the limitation of voltage and current. The relay is approved in two versions, a mains voltage version (240/120V ac) and a 24V dc version. The output parameters are common to both versions of apparatus, terminals 1&2, 3&4, 5&6, U max:out= 10.5V, I max:out= 14mA, terminals 7&8, U max:out= 10.5V, I max:out=1mA. This approval also includes the use of an approved MTL 2220 Earth leakage detector in the above system, provided that it is located in a non-hazardous zone.

Drawings

C12213-1 sheet 1 issue 2 dated January 1988
C12213-1 sheet 2 issue 2 dated January 1988
C12213-1 sheet 3 issue 2 dated January 1988
C12213-1 sheet 4 issue 2 dated January 1988
C12213-1 sheet 5 issue 3 dated April 1988
C12213-1 sheet 6 issue 4 dated May 1989
C12213-1 sheet 7 issue 2 dated January 1988
C12213-1 sheet 8 issue 2 dated January 1988
C12213-1 sheet 9 issue 2 dated January 1988
C12213-1 sheet 10 issue 2 dated January 1988
SK 1033 original issue dated 8th September 1987
SK 977 issue II dated 8th September 1987
SCI-166 sheet 1 issue 1 dated October 1987
SCI-166 sheet 2 issue 1 dated October 1987

Approval Conditions

1. The Capacitance and either the Inductance or Inductance to resistance (L/R) ratio of the load connected to each pair of hazardous area terminals must not exceed the following values, respectively, 19.2uF, 1320mH, or 6600 uH/ohm.
2. This apparatus shall not be supplied from nor contain in normal or abnormal conditions a source of potential with respect to earth in excess of 250 volts r.m.s. or 250 volts d.c.
3. Any apparatus connected to this system in a hazardous zone must comply with the requirements of clause 1.6 of AS2380.1, and be installed in accordance with the requirements of clause 1.6.2 and Section 2 of AS2380.7.



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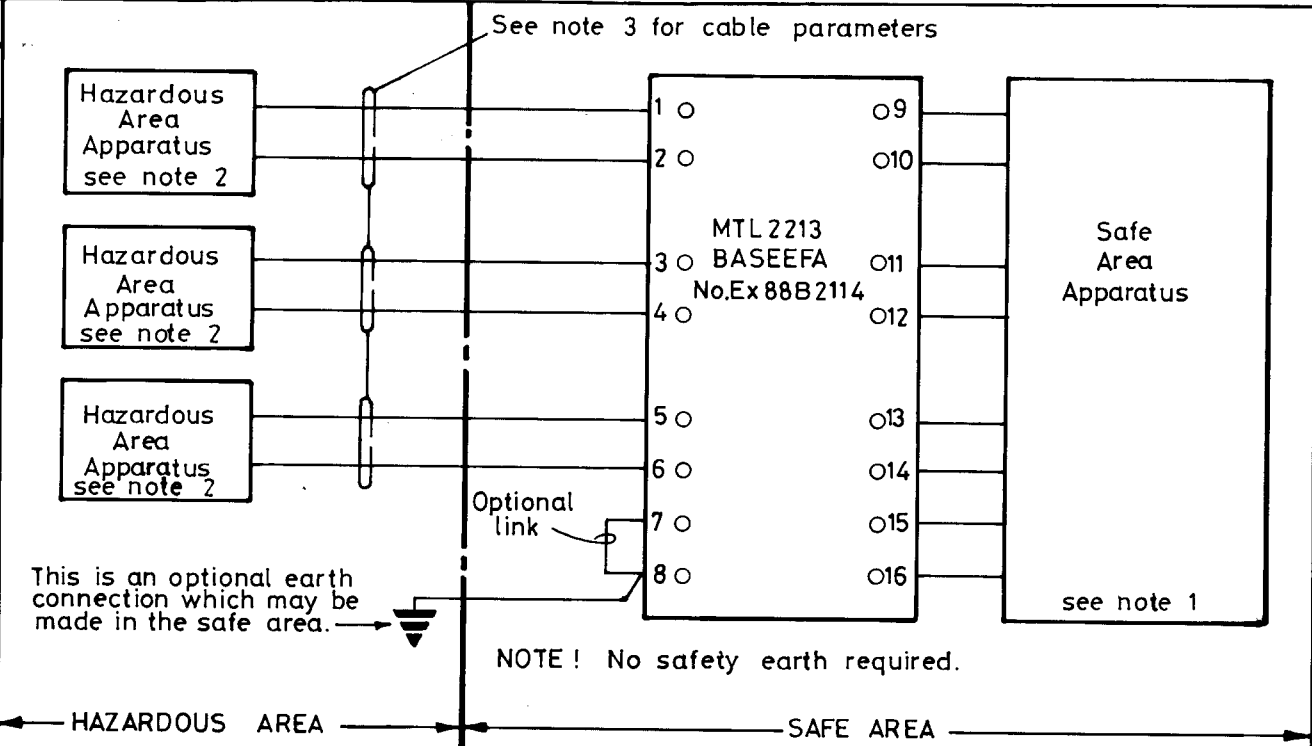
Approval Conditions(cont)

4. Permissible interconnecting cables shall be those cables where the Capacitance and Inductance OR Inductance to Resistance (L/R) ratio does not exceed the following values, respectively, 19.2uF, 1320mH or 6600uH/ohm.
5. Where an approved MTL 2220 Earth Leakage Detector is connected to the system the Capacitance and Inductance OR Inductance to Resistance ratio of the interconnecting cables shall not exceed the following values, respectively, 3.52uF, 1320 mH, or 6600uH/ohm.
6. A copy of this approval shall be supplied with any of this apparatus supplied to a coal mine in New South Wales.
7. The Chief Inspector of Coal Mines has the right to vary or revoke this approval at any time.
8. Any repair to this apparatus that may affect its explosion protected properties shall be carried out only at a workshop registered for the purpose.
9. The manufacturer shall on his own responsibility carry out such tests and examinations as are necessary to ensure that this apparatus provides satisfactory operation in service.
10. Adequate precautions shall be taken to guard against danger arising from interconnection of intrinsically safe sources of current, and the charging of intrinsically safe circuits by leakage or induction from other circuits.
11. All parts of this system that are not intrinsically safe shall be installed in an explosion protected enclosure, or be located in a safe area.

Marking on Apparatus

1. The manufacturers name or mark and the approval number are to be inscribed in a durable manner in a prominent position on each part of the apparatus covered by this approval.
2. The manufacturers name or mark and the approval number are to be inscribed in a durable manner in a prominent position on, (a) the exterior of a non-explosion protected enclosure housing this approved apparatus in a safe area, and (b) externally at the point or points of exit from the enclosure, of intrinsically safe circuitry connected to this approved apparatus, where this approved apparatus is housed in an explosion protected enclosure.

A A RECZEK
Senior Inspector of Electrical Engineering
FOR CHIEF INSPECTOR OF COAL MINES



Note 1. Safe area apparatus - unspecified except that it must not be supplied from nor contain under normal or abnormal conditions a source of potential with respect to earth in excess of 250V r.m.s. or 250V d.c.

Note 2. Hazardous area apparatus - must meet the requirement of clause 1.3 of EN50 014 and must be selected and installed to meet the requirements of EN50 020, in particular with respect to clauses 4.1 and 5.

Note 3. The following cable parameters must not be exceeded (applies to each channel):-

Group	Capacitance	Inductance	or	L/R ratio
IIA	19.2 μ F	1320 mH		6600 μ H/ Ω
IIB	7.2 μ F	495 mH		2475 μ H/ Ω
IIC	2.4 μ F	165 mH		825 μ H/ Ω

Note 4. Where the hazardous area cables are part of a multicore, they must be part of a Type A or Type B multicore cable (as defined in Clause 5.3 of BS5501: Part 9:1982 EN50 039). The peak voltage of any circuit contained within the multicore must not exceed 60 volts.

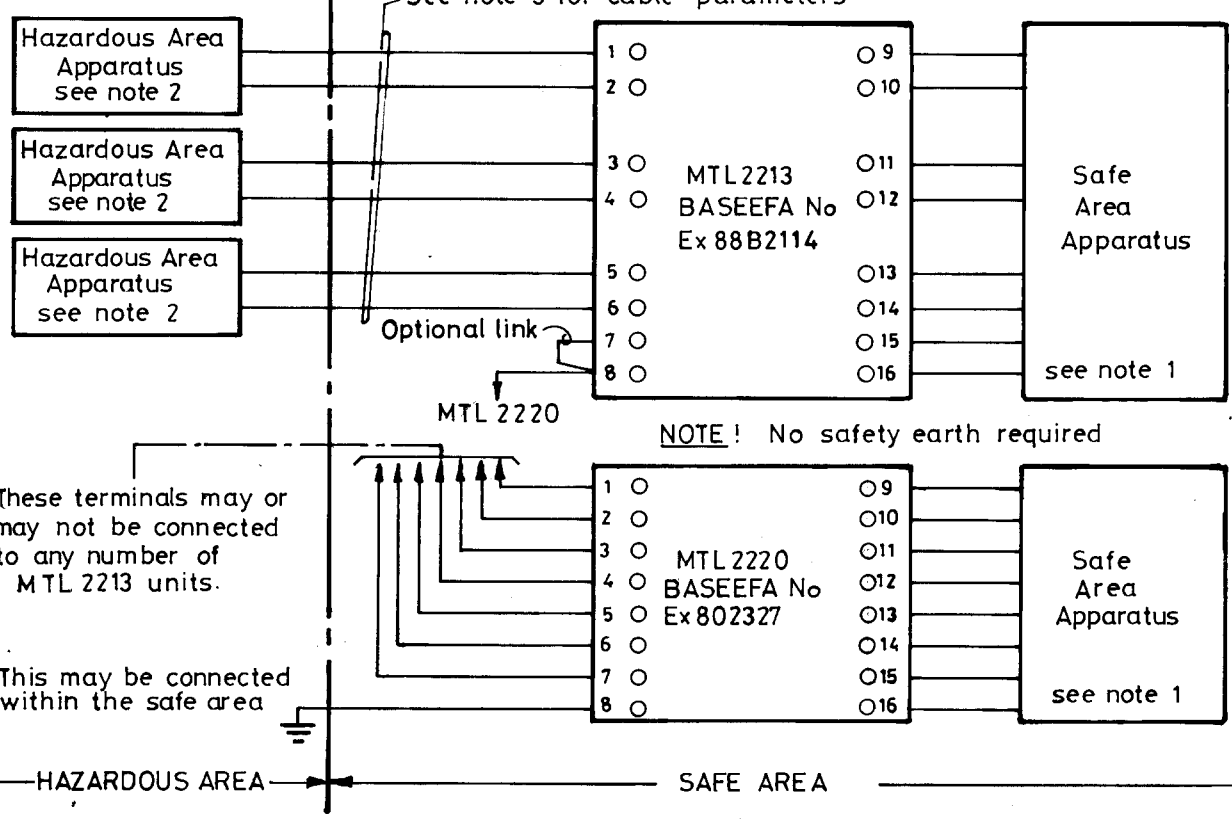
Note 5. For intrinsic safety purposes, the MTL2213 output circuit is considered to be a source of power with a maximum open circuit voltage of 10.5 volts, a maximum open circuit voltage of 10.5 volts, a maximum short circuit current of 14mA and a source resistance of 800 ohms minimum.

Note 6. When only one channel is used then the apparatus in the hazardous area need not meet the 500V insulation requirement provided there is no other earth connection. Otherwise the hazardous area apparatus must be capable of withstanding an a.c. test voltage of 500V r.m.s. with respect to earth or frame of the apparatus for a period of one minute without breakdown (d.c. resistance and impedance at 50 Hz shall not be less than 100K Ω).

BASEEFA System Certificate no.Ex882115		Code EEx ia IIC T4
Used on	Certifying Authority:- BASEEFA	Scale
Tolerance unless otherwise stated \pm		Sheet 1 of 2
Title	Installation drawing for the MTL2213 3-channel switch/proximity detector relay.	Drg. No. SCI-166

Iss.	1
Date/Drawn	10.87/DRG
Modification	
Chk	

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Luton, England.
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Note 1. Safe area apparatus - unspecified except that it must not be supplied from nor contain under normal or abnormal conditions a source of potential with respect to earth in excess of 250V r.m.s. or 250V d.c.

Note 2. Hazardous area apparatus - must meet the requirement of clause 1.3 of EN50 014 and must be selected and installed to meet the requirement of EN50 020, in particular with respect to clauses 4.1 and 5.

Note 3. The following cable parameters must not be exceeded (applies to each channel):-

Group	Capacitance	Inductance	or	L/R ratio
IIA	3.52 μ F	1320 mH		6600 μ H/ Ω
IIB	1.32 μ F	495 mH		2475 μ H/ Ω
IIC	0.44 μ F	165 mH		825 μ H/ Ω

Note 4. Where the hazardous area cables are part of a multicore, they must be part of a Type A or Type B multicore cable (as defined in Clause 5.3 of BS5501: Part 9:1982 EN50 039). The peak voltage of any circuit contained within the multicore must not exceed 60 volts.

Note 5. For intrinsic safety purposes, the MTL2213 output circuit is considered to be a source of power with a maximum open circuit voltage of 10.5 volts, a maximum short circuit current of 14mA and a source resistance of 800 ohms minimum.

Note 6. The circuit in the hazardous area must be capable of withstanding a test voltage of 500 volts r.m.s. with respect to earth or frame of the apparatus for a period of one minute without breakdown (d.c. resistance and impedance at 50 Hz not be less than 100K Ω).

Used on Certifying Authority:-	BASEEFA	Scale
Tolerance unless otherwise stated \pm		Sheet 2 of 2
Title	Installation drawing for the MTL2213 3-channel switch/proximity detector relay with the MTL2220	Drg. No. SCI-166

Iss.	1
Date/Drawn	10.87/DRG
Modification	
Chk	